

# SEQUENCE LISTING

<110> Walke, D. Wade  
Wang, Xiaoming  
Scoville, John  
Turner, C. Alexander Jr.

<120> Novel Human Semaphorin Homologs and Polynucleotides Encoding the Same

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<151> 2000-05-18

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<151> 2000-06-02

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<212> DNA

<213> homo sapiens

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<212> PRT
<213> homo sapiens

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Asp Thr Arg Arg Ser Cys Gln Ser Lys Gly Lys Thr Glu Glu Glu Cys
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Cys Gly Thr Asn Ala Phe Ser Pro Met Cys Thr Ser Arg Gln Val Gly
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Thr	Glu	Arg	Ser	Leu	Gln	Asp	Ala	Gln	Arg	Leu	Phe	Leu	Met	Ser	Glu
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Ala	Val	Gln	Pro	Val	Thr	Pro	Glu	Pro	Cys	Val	Thr	Gln	Asp	Ser	Val
			260					265					270		
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305					310					315					320
His	Val	Leu	Pro	Pro	Gly	Arg	Arg	Glu	Pro	Leu	Arg	Ser	Leu	Arg	Ile
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Leu	His	Ser	Ala	Arg	Ala	Leu	Phe	Val	Gly	Leu	Arg	Asp	Gly	Val	Leu
			340					345					350		
Arg	Val	Pro	Leu	Glu	Arg	Cys	Ala	Ala	Tyr	Arg	Ser	Gln	Gly	Ala	Cys
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Leu	Gly	Ala	Arg	Asp	Pro	Tyr	Cys	Gly	Trp	Asp	Gly	Lys	Gln	Gln	Arg
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Pro	Trp	Ser	Pro	Trp	Gln	Pro	Cys	Glu	His	Leu	Asp	Gly	Asp	Asn	Ser
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Thr Arg Ser Cys Thr Ser Pro Ala Pro Ser Pro Gly Glu Asp Ile Cys  
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Ala Cys Ala Gly Asn Ser Ser Gln Ser Arg Pro Cys Pro Tyr Ser Glu  
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820 825 830  
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His Cys Gln Arg Gln Ser Gln Glu Ser Thr Leu Val His Pro Ala Thr  
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Pro Asn His Leu His Tyr Lys Gly Gly Gly Thr Pro Lys Asn Glu Lys  
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Ser	Pro	Glu	Met	Gln	Ser	Lys	Cys	His	Gln	Lys	Gly	Lys	Asn	Asn	Gln		
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<211> 2109

<212> DNA

<213> homo sapiens

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<211> 702

<212> PRT

<213> homo sapiens

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Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Glu Glu Ala
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Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser
65           70           75           80
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Gly Cys Glu Ser Ser Arg Asp Thr Gly Arg Ala Leu Gln Val His Met  
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Gly Ser Met Ser Pro Pro Ser Ala Trp Pro Cys Val Leu Asp Gly Pro  
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Glu Thr Arg Gln Val Leu Cys Gln Pro Pro Lys Pro Cys Val His Ser  
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Pro His Leu Leu Leu Val His Ser Cys Phe Ile Pro Ala Ser Gly Leu  
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Gly Val Pro Ser Gln Leu Pro His Pro Ile Trp Ser Ser Ser Pro Ala  
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Pro Cys Gly Asp Leu Phe Val Lys Ser Leu Gly Thr Gly Gln Pro Gly  
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<210> 25

<211> 697

<212> PRT

<213> homo sapiens

<400> 25

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Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Leu Glu Glu Ala
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Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser
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Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala
 85          90          95
Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln
100          105          110
Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr
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His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala
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Ile Asp Ala Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys
145          150          155          160
Glu Lys Cys Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile
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Asp Gly Gly Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro
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 Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Leu Glu Glu Ala  
 50 55 60

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Glu	Lys	Cys	Pro	Tyr	Asp	Pro	Ala	Arg	Gly	Phe	Thr	Gly	Leu	Ile	Ile		165	170	175
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Asp	Ile	Arg	Arg	Ser	Arg	His	Pro	His	Ser	Leu	Arg	Thr	Glu	Glu	Thr		195	200	205
Pro	Met	His	Trp	Leu	Asn	Asp	Ala	Glu	Phe	Val	Phe	Ser	Val	Leu	Val		210	215	220
Arg	Glu	Ser	Lys	Ala	Ser	Ala	Val	Gly	Asp	Asp	Asp	Lys	Val	Tyr	Tyr		225	230	235
Phe	Phe	Thr	Glu	Arg	Ala	Thr	Glu	Glu	Gly	Ser	Gly	Ser	Phe	Thr	Gln		245	250	255
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Lys	Ala	Arg	Leu	Ile	Cys	His	Ile	Pro	Leu	Tyr	Glu	Thr	Leu	Arg	Gly		290	295	300
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<211> 2517

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<213> homo sapiens

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<210> 29

<211> 838

<212> PRT

<213> homo sapiens

<400> 29

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Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Leu Glu Glu Ala
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 65             70             75             80
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 85             90             95
Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln
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<211> 2613

<212> DNA

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cgggccagcc gggcaggagg atctgcggtg caactgcaga cagtctcagg cagggtctg     2220
caggtccata tgggtcaat gtcaccaccc tctgcatggc cctgtgtgct ggatggctc     2280
gaaaccagac aagtcctctg ccagccacct aagccctgcg tacattcaca tgcacacatg     2340
gaagaatgtt tatcggctgg gctgcagtgc cccaccctc accttctcct ggtgcattct     2400
tgtttcatcc ctgcttctgg acttggggta ccctcccaat tgccacatcc tatctggtcc     2460
tcttccccag ccccatgtgg tgacctctt gtcaagagct tgggaacggg ccagcctggg     2520
gaggtaaagac tgcatactc ccctcctctc ccttctgtg tggcccttgt gaatcagcct     2580
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<210> 31
<211> 870
<212> PRT
<213> homo sapiens

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<400> 31
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                20             25             30
Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His
                35             40             45
Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Leu Glu Glu Ala
                50             55             60
Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser
65             70             75             80
Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala
                85             90             95
Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln
                100            105            110
Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr
                115            120            125
His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala
                130            135            140

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Ser Asn Leu Ala Arg Ala Leu Trp Leu Leu Asn Gly Ser Met Gly Leu  
595 600 605  
Ser Asp Gly Gln Gly Gly Tyr Arg Val Gly Val Asp Gly Leu Leu Val  
610 615 620  
Thr Asp Ala Gln Pro Glu His Ser Gly Asn Tyr Gly Cys Tyr Ala Glu  
625 630 635 640  
Glu Asn Gly Leu Arg Thr Leu Leu Ala Ser Tyr Ser Leu Thr Val Arg  
645 650 655  
Pro Ala Thr Pro Ala Pro Ala Pro Lys Ala Pro Ala Thr Pro Gly Ala  
660 665 670  
Gln Leu Ala Pro Asp Val Arg Leu Leu Tyr Val Leu Ala Ile Ala Ala  
675 680 685  
Leu Gly Gly Leu Cys Leu Ile Leu Ala Ser Ser Leu Leu Tyr Val Ala  
690 695 700  
Cys Leu Arg Glu Gly Arg Arg Gly Arg Arg Lys Tyr Ser Leu Gly  
705 710 715 720  
Arg Ala Ser Arg Ala Gly Gly Ser Ala Val Gln Leu Gln Thr Val Ser  
725 730 735  
Gly Arg Ala Leu Gln Val His Met Gly Ser Met Ser Pro Pro Ser Ala  
740 745 750  
Trp Pro Cys Val Leu Asp Gly Pro Glu Thr Arg Gln Val Leu Cys Gln  
755 760 765  
Pro Pro Lys Pro Cys Val His Ser His Ala His Met Glu Glu Cys Leu  
770 775 780  
Ser Ala Gly Leu Gln Cys Pro His Pro His Leu Leu Leu Val His Ser  
785 790 795 800  
Cys Phe Ile Pro Ala Ser Gly Leu Gly Val Pro Ser Gln Leu Pro His  
805 810 815  
Pro Ile Trp Ser Ser Ser Pro Ala Pro Cys Gly Asp Leu Phe Val Lys  
820 825 830  
Ser Leu Gly Thr Gly Gln Pro Gly Glu Val Arg Leu His His Ser Pro  
835 840 845  
Pro Leu Pro Ser Cys Val Ala Leu Val Asn Gln Pro Pro His Ser Pro  
850 855 860  
Trp Ser Phe Ser Arg Val  
865 870

<210> 32

<211> 2598

<212> DNA

<213> homo sapiens

<400> 32

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gaagagctct	ctgggacccg	gcacttcaag	ggccaagccc	agaactactc	aacactgctg	180
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gccaacgaca	taggagatgg	ggctcacaaa	gagatccact	gggaagcctc	cccagagatg	300
caaagcaaat	gtcatcaaaa	agggaaaaac	aaccagacgg	agtgttttaa	ccatgtgcgg	360
ttcctgcagc	ggctcaattc	taccacctc	tatgcatgtg	ggactcacgc	cttcacagccc	420
ctctgtgcag	ccattgatgc	tgaggccttc	accttgccaa	ccagcttcga	ggaggggaag	480
gagaagtgtc	cttatgaccc	agcccgtggc	ttcacaggcc	tcatcattga	tggaggcctc	540
tacacagcca	ctaggatatga	attccggagc	attcctgaca	tccgccggag	cgcacacca	600
cactccctga	gaactgagga	gacaccaatg	cattggctca	atgatgcgga	gtttgtgttc	660
tccgtcctcg	tgccgggagag	caaggccagt	gcagtgggtg	atgatgacaa	ggtgtactac	720
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cacctgtgtgg cccgtgtggc tcgygtctgc aagggagacc tgggagggaa gaagatcctg      840
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acactgcgtg ggggtctgcag cctggatgct gaaacctcaa gccgtacaca cttctatgca      960
gccttcacgc tgagcacaca gtggaagacc ctggaggcct cagccatctg ccgctatgac     1020
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cgctgggggtc gctatgaggg tgggggtgcct gagccccggc ctggctcgtg tatcacagat     1140
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gtaaagtgtc acccactgat ggctcggccc gttgtgcccc cacgtggacg gcccctgctg     1260
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ctgggctctg ggatgcacat tattgaagag acacaagtgt tcaggaggct ccagtctgtg     1440
gaaaatctag tcatctctct attgcagcac agcctctatg tgggggctcc tagcggagtc     1500
atccagctac cactctccag ctgctcccgc taccgatcct gctatgactg catcttggcc     1560
cgagaccctt actgtggctg ggaccctggc acccatgcct gcgcagcagc caccaccata     1620
gccaacagga cagcactgat acaggacata gagagaggaa atcgaggctg tgagagcagc     1680
agggatacag ggccaccacc accactgaag acccgctctg tgctccgggg tgatgatgtc     1740
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tgtgtgacc tctttgtcaa gagcttgagg acgggccagc ctggggaggt aagactgcat     2520
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<210> 33
<211> 865
<212> PRT
<213> homo sapiens

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<400> 33
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Ala Val Pro Gly Pro Ser Leu Arg Arg Pro Ser Arg Glu Leu Asp Ala
      20             25             30
Thr Pro Arg Met Thr Ile Pro Tyr Glu Glu Leu Ser Gly Thr Arg His
      35             40             45
Phe Lys Gly Gln Ala Gln Asn Tyr Ser Thr Leu Leu Leu Glu Glu Ala
      50             55             60
Ser Ala Arg Leu Leu Val Gly Ala Arg Gly Ala Leu Phe Ser Leu Ser
      65             70             75             80
Ala Asn Asp Ile Gly Asp Gly Ala His Lys Glu Ile His Trp Glu Ala
      85             90             95
Ser Pro Glu Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln
      100            105            110
Thr Glu Cys Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr
      115            120            125
His Leu Tyr Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala
      130            135            140

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Ile	Asp	Ala	Glu	Ala	Phe	Thr	Leu	Pro	Thr	Ser	Phe	Glu	Glu	Gly	Lys	145	150	155	160
Glu	Lys	Cys	Pro	Tyr	Asp	Pro	Ala	Arg	Gly	Phe	Thr	Gly	Leu	Ile	Ile	165	170	175	
Asp	Gly	Gly	Leu	Tyr	Thr	Ala	Thr	Arg	Tyr	Glu	Phe	Arg	Ser	Ile	Pro	180	185	190	
Asp	Ile	Arg	Arg	Ser	Arg	His	Pro	His	Ser	Leu	Arg	Thr	Glu	Glu	Thr	195	200	205	
Pro	Met	His	Trp	Leu	Asn	Asp	Ala	Glu	Phe	Val	Phe	Ser	Val	Leu	Val	210	215	220	
Arg	Glu	Ser	Lys	Ala	Ser	Ala	Val	Gly	Asp	Asp	Asp	Lys	Val	Tyr	Tyr	225	230	235	240
Phe	Phe	Thr	Glu	Arg	Ala	Thr	Glu	Glu	Gly	Ser	Gly	Ser	Phe	Thr	Gln	245	250	255	
Ser	Arg	Ser	Ser	His	Arg	Val	Ala	Arg	Val	Ala	Arg	Val	Cys	Lys	Gly	260	265	270	
Asp	Leu	Gly	Lys	Lys	Ile	Leu	Gln	Lys	Lys	Trp	Thr	Ser	Phe	Leu		275	280	285	
Lys	Ala	Arg	Leu	Ile	Cys	His	Ile	Pro	Leu	Tyr	Glu	Thr	Leu	Arg	Gly	290	295	300	
Val	Cys	Ser	Leu	Asp	Ala	Glu	Thr	Ser	Ser	Arg	Thr	His	Phe	Tyr	Ala	305	310	315	320
Ala	Phe	Thr	Leu	Ser	Thr	Gln	Trp	Lys	Thr	Leu	Glu	Ala	Ser	Ala	Ile	325	330	335	
Cys	Arg	Tyr	Asp	Leu	Ala	Glu	Ile	Gln	Ala	Val	Phe	Ala	Gly	Pro	Tyr	340	345	350	
Met	Glu	Tyr	Gln	Asp	Gly	Ser	Arg	Arg	Trp	Gly	Arg	Tyr	Glu	Gly	Gly	355	360	365	
Val	Pro	Glu	Pro	Arg	Pro	Gly	Ser	Cys	Ile	Thr	Asp	Ser	Leu	Arg	Ser	370	375	380	
Gln	Gly	Tyr	Asn	Ser	Ser	Gln	Asp	Leu	Pro	Ser	Leu	Val	Leu	Asp	Phe	385	390	395	400
Val	Lys	Leu	His	Pro	Leu	Met	Ala	Arg	Pro	Val	Val	Pro	Thr	Arg	Gly	405	410	415	
Arg	Pro	Leu	Leu	Lys	Arg	Asn	Ile	Arg	Tyr	Thr	His	Leu	Thr	Gly		420	425	430	
Thr	Pro	Val	Thr	Thr	Pro	Ala	Gly	Pro	Thr	Tyr	Asp	Leu	Leu	Phe	Leu	435	440	445	
Gly	Thr	Ala	Asp	Gly	Trp	Ile	His	Lys	Ala	Val	Val	Leu	Gly	Ser	Gly	450	455	460	
Met	His	Ile	Ile	Glu	Glu	Thr	Gln	Val	Phe	Arg	Glu	Ser	Gln	Ser	Val	465	470	475	480
Glu	Asn	Leu	Val	Ile	Ser	Leu	Leu	Gln	His	Ser	Leu	Tyr	Val	Gly	Ala	485	490	495	
Pro	Ser	Gly	Val	Ile	Gln	Leu	Pro	Leu	Ser	Ser	Cys	Ser	Arg	Tyr	Arg	500	505	510	
Ser	Cys	Tyr	Asp	Cys	Ile	Leu	Ala	Arg	Asp	Pro	Tyr	Cys	Gly	Trp	Asp	515	520	525	
Pro	Gly	Thr	His	Ala	Cys	Ala	Ala	Ala	Thr	Thr	Ile	Ala	Asn	Arg	Thr	530	535	540	
Ala	Leu	Ile	Gln	Asp	Ile	Glu	Arg	Gly	Asn	Arg	Gly	Cys	Glu	Ser	Ser	545	550	555	560
Arg	Asp	Thr	Gly	Pro	Pro	Pro	Leu	Lys	Thr	Arg	Ser	Val	Leu	Arg		565	570	575	
Gly	Asp	Asp	Val	Leu	Leu	Pro	Cys	Asp	Gln	Pro	Ser	Asn	Leu	Ala	Arg	580	585	590	

Ala Leu Trp Leu Leu Asn Gly Ser Met Gly Leu Ser Asp Gly Gln Gly  
 595 600 605  
 Gly Tyr Arg Val Gly Val Asp Gly Leu Leu Val Thr Asp Ala Gln Pro  
 610 615 620  
 Glu His Ser Gly Asn Tyr Gly Cys Tyr Ala Glu Glu Asn Gly Leu Arg  
 625 630 635 640  
 Thr Leu Leu Ala Ser Tyr Ser Leu Thr Val Arg Pro Ala Thr Pro Ala  
 645 650 655  
 Pro Ala Pro Lys Ala Pro Ala Thr Pro Gly Ala Gln Leu Ala Pro Asp  
 660 665 670  
 Val Arg Leu Leu Tyr Val Leu Ala Ile Ala Ala Leu Gly Gly Leu Cys  
 675 680 685  
 Leu Ile Leu Ala Ser Ser Leu Leu Tyr Val Ala Cys Leu Arg Glu Gly  
 690 695 700  
 Arg Arg Gly Arg Arg Arg Lys Tyr Ser Leu Gly Arg Ala Ser Arg Ala  
 705 710 715 720  
 Gly Gly Ser Ala Val Gln Leu Gln Thr Val Ser Gly Arg Ala Leu Gln  
 725 730 735  
 Val His Met Gly Ser Met Ser Pro Pro Ser Ala Trp Pro Cys Val Leu  
 740 745 750  
 Asp Gly Pro Glu Thr Arg Gln Val Leu Cys Gln Pro Pro Lys Pro Cys  
 755 760 765  
 Val His Ser His Ala His Met Glu Glu Cys Leu Ser Ala Gly Leu Gln  
 770 775 780  
 Cys Pro His Pro His Leu Leu Leu Val His Ser Cys Phe Ile Pro Ala  
 785 790 795 800  
 Ser Gly Leu Gly Val Pro Ser Gln Leu Pro His Pro Ile Trp Ser Ser  
 805 810 815  
 Ser Pro Ala Pro Cys Gly Asp Leu Phe Val Lys Ser Leu Gly Thr Gly  
 820 825 830  
 Gln Pro Gly Glu Val Arg Leu His His Ser Pro Pro Leu Pro Ser Cys  
 835 840 845  
 Val Ala Leu Val Asn Gln Pro Pro His Ser Pro Trp Ser Phe Ser Arg  
 850 855 860  
 Val  
 865

<210> 34  
 <211> 351  
 <212> DNA  
 <213> homo sapiens

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 ccctctgtg cagccattga tgctgaggcc ttcaccttgc caaccagctt cgaggagggg 180  
 aaggagaagt gtccttatga cccagcccgt ggcttcacag gcctcatcat tgatggaggc 240  
 ctctacacag ccactaggta tgaattccg agcattcctg acatccgccg gagccgccac 300  
 ccacactccc tgagaactga ggagacacca atgcattggc tcaatggtta g 351

<210> 35  
 <211> 116  
 <212> PRT  
 <213> homo sapiens

<400> 35

Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln Thr Glu Cys  
 1 5 10 15  
 Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr His Leu Tyr  
 20 25 30  
 Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala  
 35 40 45  
 Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys  
 50 55 60  
 Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly  
 65 70 75 80  
 Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg  
 85 90 95  
 Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His  
 100 105 110  
 Trp Leu Asn Gly  
 115

<210> 36  
 <211> 1194  
 <212> DNA  
 <213> homo sapiens

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 cccctctgtg cagccattga tgctgaggcc ttcacctgc caaccagctt cgaggagggg 180  
 aaggagaagt gtccttatga cccagcccg ggcttcacag gcctcatcat tgatggaggc 240  
 ctctacacag ccactaggta tgaattccg agcattcctg acatccgccg gagccgccac 300  
 ccacactccc tgagaactga ggagacacca atgcattggc tcaatgatgc ggagtgtgtg 360  
 ttctccgtcc tcgtgcgggg gagcaaggcc agtgcagtggt gtgatgatga caaggtgtac 420  
 tacttcttca cggagcgtgc cactgaggag ggctctggca gcttcactca gagccgcagc 480  
 agtcaccgtg tgccccgtgt ggctcgygtc tgcaaggagg acctgggagg gaagaagatc 540  
 ctgcagaaga agtggacttc cttcctgaaa gcccgctc tctgccacat tccactgtat 600  
 gagacactgc gtgggggtctg cagcctggat gctgaaacct caagccgtac acacttctat 660  
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 gacctggcag agatccaggc tgtctttgca ggaccctata tggaatacca ggatggttcc 780  
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 tttgtaaagt tgcaaccact gatggctcgg cccgttgtgc ccacacgtgg acggccctg 960  
 ctgctcaagc gcaacatacg ctacacacac cttacaggga cacctgtcac cacgctgct 1020  
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<210> 37  
 <211> 397  
 <212> PRT  
 <213> homo sapiens

<400> 37  
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 Phe Asn His Val Arg Phe Leu Gln Arg Leu Asn Ser Thr His Leu Tyr  
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 Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala  
 35 40 45

Glu	Ala	Phe	Thr	Leu	Pro	Thr	Ser	Phe	Glu	Glu	Gly	Lys	Glu	Lys	Cys
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Pro	Tyr	Asp	Pro	Ala	Arg	Gly	Phe	Thr	Gly	Leu	Ile	Ile	Asp	Gly	Gly
65					70					75					80
Leu	Tyr	Thr	Ala	Thr	Arg	Tyr	Glu	Phe	Arg	Ser	Ile	Pro	Asp	Ile	Arg
				85					90					95	
Arg	Ser	Arg	His	Pro	His	Ser	Leu	Arg	Thr	Glu	Glu	Thr	Pro	Met	His
			100						105				110		
Trp	Leu	Asn	Asp	Ala	Glu	Phe	Val	Phe	Ser	Val	Leu	Val	Arg	Glu	Ser
		115					120					125			
Lys	Ala	Ser	Ala	Val	Gly	Asp	Asp	Asp	Lys	Val	Tyr	Tyr	Phe	Phe	Thr
	130					135					140				
Glu	Arg	Ala	Thr	Glu	Glu	Gly	Ser	Gly	Ser	Phe	Thr	Gln	Ser	Arg	Ser
145					150					155					160
Ser	His	Arg	Val	Ala	Arg	Val	Ala	Arg	Val	Cys	Lys	Gly	Asp	Leu	Gly
				165					170					175	
Gly	Lys	Lys	Ile	Leu	Gln	Lys	Lys	Trp	Thr	Ser	Phe	Leu	Lys	Ala	Arg
			180						185				190		
Leu	Ile	Cys	His	Ile	Pro	Leu	Tyr	Glu	Thr	Leu	Arg	Gly	Val	Cys	Ser
		195					200					205			
Leu	Asp	Ala	Glu	Thr	Ser	Ser	Arg	Thr	His	Phe	Tyr	Ala	Ala	Phe	Thr
	210						215					220			
Leu	Ser	Thr	Gln	Trp	Lys	Thr	Leu	Glu	Ala	Ser	Ala	Ile	Cys	Arg	Tyr
225					230					235					240
Asp	Leu	Ala	Glu	Ile	Gln	Ala	Val	Phe	Ala	Gly	Pro	Tyr	Met	Glu	Tyr
				245					250					255	
Gln	Asp	Gly	Ser	Arg	Arg	Trp	Gly	Arg	Tyr	Glu	Gly	Gly	Val	Pro	Glu
			260					265					270		
Pro	Arg	Pro	Gly	Ser	Cys	Ile	Thr	Asp	Ser	Leu	Arg	Ser	Gln	Gly	Tyr
	275						280					285			
Asn	Ser	Ser	Gln	Asp	Leu	Pro	Ser	Leu	Val	Leu	Asp	Phe	Val	Lys	Leu
	290					295					300				
His	Pro	Leu	Met	Ala	Arg	Pro	Val	Val	Pro	Thr	Arg	Gly	Arg	Pro	Leu
305					310					315					320
Leu	Leu	Lys	Arg	Asn	Ile	Arg	Tyr	Thr	His	Leu	Thr	Gly	Thr	Pro	Val
				325					330					335	
Thr	Thr	Pro	Ala	Gly	Pro	Thr	Tyr	Asp	Leu	Leu	Phe	Leu	Gly	Thr	Ala
			340					345					350		
Asp	Gly	Trp	Ile	His	Lys	Ala	Val	Val	Leu	Gly	Ser	Gly	Met	His	Ile
	355					360						365			
Ile	Glu	Glu	Thr	Gln	Val	Phe	Arg	Glu	Ser	Gln	Ser	Val	Glu	Asn	Leu
	370					375					380				
Val	Ile	Ser	Leu	Leu	Gln	Val	Ala	Leu	Leu	Cys	Asp	Pro			
385					390					395					

<210> 38  
 <211> 1812  
 <212> DNA  
 <213> homo sapiens

<400> 38	
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cccctctgtg cagccattga tgctgaggcc ttcaccttgc caaccagctt cgaggagggg	180
aaggagaagt gtccttatga cccagcccgt ggcttcacag gcctcatcat tgatggaggg	240
ctctacacag ccactaggta tgaattccgg agcattcctg acatccgccg gagccgccac	300

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ccacactccc tgagaactga ggagacacca atgcattggc tcaatgatgc ggagtttgtg 360
ttctccgtcc tcgtgcggga gagcaaggcc agtgacgtgg gtgatgatga caaggtgtac 420
tacttcttca cggagcgtgc cactgaggag ggctctggca gcttactca gagccgcagc 480
agtcaccgtg tggcccgtgt ggctcgygtc tgcaaggagg acctgggagg gaagaagatc 540
ctgcagaaga agtggacttc cttcctgaaa gcccgctcca tctgccacat tccactgtat 600
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gacctggcag agatccaggc tgtctttgca ggaccctata tggaatacca ggatggttcc 780
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<210> 39
<211> 603
<212> PRT
<213> homo sapiens

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20          25          30
Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala
35          40          45
Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys
50          55          60
Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly
65          70          75          80
Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg
85          90          95
Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His
100         105         110
Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val Arg Glu Ser
115         120         125
Lys Ala Ser Ala Val Gly Asp Asp Lys Val Tyr Tyr Phe Phe Thr
130         135         140
Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln Ser Arg Ser
145         150         155         160
Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly Asp Leu Gly
165         170         175
Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu Lys Ala Arg

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180 185 190  
 Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly Val Cys Ser  
 195 200 205  
 Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala Ala Phe Thr  
 210 215 220  
 Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile Cys Arg Tyr  
 225 230 235 240  
 Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr Met Glu Tyr  
 245 250 255  
 Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly Val Pro Glu  
 260 265 270  
 Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser Gln Gly Tyr  
 275 280 285  
 Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe Val Lys Leu  
 290 295 300  
 His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly Arg Pro Leu  
 305 310 315 320  
 Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly Thr Pro Val  
 325 330 335  
 Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu Gly Thr Ala  
 340 345 350  
 Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly Met His Ile  
 355 360 365  
 Ile Glu Glu Thr Gln Val Phe Arg Glu Ser Gln Ser Val Glu Asn Leu  
 370 375 380  
 Val Ile Ser Leu Leu Gln His Ser Leu Tyr Val Gly Ala Pro Ser Gly  
 385 390 395 400  
 Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg Ser Cys Tyr  
 405 410 415  
 Asp Cys Ile Leu Ala Arg Asp Pro Tyr Cys Gly Trp Asp Pro Gly Thr  
 420 425 430  
 His Ala Cys Ala Ala Ala Thr Thr Ile Ala Asn Arg Ser Gln Gly Ser  
 435 440 445  
 Arg Thr Ala Leu Ile Gln Asp Ile Glu Arg Gly Asn Arg Gly Cys Glu  
 450 455 460  
 Ser Ser Arg Asp Thr Gly Arg Ala Leu Gln Val His Met Gly Ser Met  
 465 470 475 480  
 Ser Pro Pro Ser Ala Trp Pro Cys Val Leu Asp Gly Pro Glu Thr Arg  
 485 490 495  
 Gln Val Leu Cys Gln Pro Pro Lys Pro Cys Val His Ser His Ala His  
 500 505 510  
 Met Glu Glu Cys Leu Ser Ala Gly Leu Gln Cys Pro His Pro His Leu  
 515 520 525  
 Leu Leu Val His Ser Cys Phe Ile Pro Ala Ser Gly Leu Gly Val Pro  
 530 535 540  
 Ser Gln Leu Pro His Pro Ile Trp Ser Ser Ser Pro Ala Pro Cys Gly  
 545 550 555 560  
 Asp Leu Phe Val Lys Ser Leu Gly Thr Gly Gln Pro Gly Glu Val Arg  
 565 570 575  
 Leu His His Ser Pro Pro Leu Pro Ser Cys Val Ala Leu Val Asn Gln  
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 Pro Pro His Ser Pro Trp Ser Phe Ser Arg Val  
 595 600

<210> 40  
 <211> 1797

<212> DNA  
 <213> homo sapiens

<400> 40

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cccctctgtg cagccattga tgctgaggcc ttcaccttgc caaccagctt cgaggagggg      180
aaggagaagt gtccttatga cccagcccggt ggcttcacag gcctcatcat tgatggaggg      240
ctctacacag ccactaggta tgaattccgg agcattcctg acatccgccg gagccgccac      300
ccacactccc tgagaactga ggagacacca atgcattggc tcaatgatgc ggagtttgtg      360
ttctccgtcc tcgtgcggga gagcaaggcc agtgcagtgg gtgatgatga caaggtgtac      420
tacttcttca cggagcgtgc cactgaggag ggctctggca gcttcaactca gagccgcagc      480
agtaccctgt tggcccgtgt ggctcgygtc tgcaaggagg acctgggagg gaagaagatc      540
ctgcagaaga agtggacttc ctctctgaaa gcccgcttca tctgccacat tccactgtat      600
gagacactgc gtgggggtctg cagcctggat gctgaaacct caagccgtac acacttctat      660
gcagccttca cgctgagcac acagtggaag accctggagg cctcagccat ctgccgctat      720
gacctggcag agatccaggc tgtctttgca ggacctata tggaatacca ggatgggtcc      780
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gattcaattg gcagccaagg ctacaattca tcccaagact tgccatccct ggtcctggac      900
ttgtaaagt tgcacccact gatggctcgg cccgttgtgc ccacacgtgg acggcccctg      960
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gtcatccagc taccactctc cagctgctcc cgctaccgat cctgctatga ctgcatcttg      1260
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atagccaaca ggacagcact gatacaggac atagagagag gaaatcgagg ctgtgagagc      1380
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agcttgggaa cggggccagcc tggggaggta agactgcac actccctcc tctcccttcc      1740
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<210> 41  
 <211> 598  
 <212> PRT  
 <213> homo sapiens

<400> 41

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Met Gln Ser Lys Cys His Gln Lys Gly Lys Asn Asn Gln Thr Glu Cys
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  20              25              30
Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala
  35              40              45
Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys
  50              55              60
Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly
  65              70              75              80
Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg
  85              90              95
Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His
  100             105             110
Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val Arg Glu Ser
  
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115 120 125  
 Lys Ala Ser Ala Val Gly Asp Asp Lys Val Tyr Tyr Phe Phe Thr  
 130 135 140  
 Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln Ser Arg Ser  
 145 150 155 160  
 Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly Asp Leu Gly  
 165 170 175  
 Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu Lys Ala Arg  
 180 185 190  
 Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly Val Cys Ser  
 195 200 205  
 Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala Ala Phe Thr  
 210 215 220  
 Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile Cys Arg Tyr  
 225 230 235 240  
 Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr Met Glu Tyr  
 245 250 255  
 Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly Val Pro Glu  
 260 265 270  
 Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser Gln Gly Tyr  
 275 280 285  
 Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe Val Lys Leu  
 290 295 300  
 His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly Arg Pro Leu  
 305 310 315 320  
 Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly Thr Pro Val  
 325 330 335  
 Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu Gly Thr Ala  
 340 345 350  
 Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly Met His Ile  
 355 360 365  
 Ile Glu Glu Thr Gln Val Phe Arg Glu Ser Gln Ser Val Glu Asn Leu  
 370 375 380  
 Val Ile Ser Leu Leu Gln His Ser Leu Tyr Val Gly Ala Pro Ser Gly  
 385 390 395 400  
 Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg Ser Cys Tyr  
 405 410 415  
 Asp Cys Ile Leu Ala Arg Asp Pro Tyr Cys Gly Trp Asp Pro Gly Thr  
 420 425 430  
 His Ala Cys Ala Ala Ala Thr Thr Ile Ala Asn Arg Thr Ala Leu Ile  
 435 440 445  
 Gln Asp Ile Glu Arg Gly Asn Arg Gly Cys Glu Ser Ser Arg Asp Thr  
 450 455 460  
 Gly Arg Ala Leu Gln Val His Met Gly Ser Met Ser Pro Pro Ser Ala  
 465 470 475 480  
 Trp Pro Cys Val Leu Asp Gly Pro Glu Thr Arg Gln Val Leu Cys Gln  
 485 490 495  
 Pro Pro Lys Pro Cys Val His Ser His Ala His Met Glu Glu Cys Leu  
 500 505 510  
 Ser Ala Gly Leu Gln Cys Pro His Pro His Leu Leu Leu Val His Ser  
 515 520 525  
 Cys Phe Ile Pro Ala Ser Gly Leu Gly Val Pro Ser Gln Leu Pro His  
 530 535 540  
 Pro Ile Trp Ser Ser Ser Pro Ala Pro Cys Gly Asp Leu Phe Val Lys  
 545 550 555 560  
 Ser Leu Gly Thr Gly Gln Pro Gly Glu Val Arg Leu His His Ser Pro



565                      570                      575  
 Pro Leu Pro Ser Cys Val Ala Leu Val Asn Gln Pro Pro His Ser Pro  
 580                      585                      590  
 Trp Ser Phe Ser Arg Val  
 595

<210> 42  
 <211> 2235  
 <212> DNA  
 <213> homo sapiens

<400> 42

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cccctctgtg	cagccattga	tgctgaggcc	ttcaccttgc	caaccagctt	cgaggagggg	180
aaggagaagt	gtccttatga	cccagcccg	ggcttcacag	gcctcatcat	tgatggaggc	240
ctctacacag	ccactaggta	tgaattccgg	agcattcctg	acatccgccg	gagccgccac	300
ccacactccc	tgagaactga	ggagacacca	atgcattggc	tcaatgatgc	ggagtgtgtg	360
ttctccgtcc	tcgtgcggga	gagcaaggcc	agtgcagtgg	gtgatgatga	caaggtgtac	420
tacttcttca	cggagcgtgc	cactgaggag	ggctctggca	gcttcaactca	gagccgcagc	480
agtcaccgtg	tggcccgtgt	ggctcgygtc	tgcaagggag	acctggggagg	gaagaagatc	540
ctgcagaaga	agtggacttc	cttcctgaaa	gcccgtctca	tctgccacat	tccactgtat	600
gagacactgc	gtggggtctg	cagcctggat	gctgaaacct	caagccgtac	acacttctat	660
gcagccttca	cgtgagcac	acagtggaag	accctggagg	cctcagccat	ctgccgctat	720
gacctggcag	agatccaggc	tgtctttgca	ggaccctata	tgggaatacca	ggatgggtcc	780
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gcccagagacc	cctactgttg	ctgggaccct	ggcaccatg	cctgcgcagc	agccaccacc	1320
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cgaggctgtg	agagcagcag	ggatacaggg	ccaccaccac	cactgaagac	ccgctctgtg	1440
ctccgggggtg	atgatgtcct	cctgcctgt	gaccagccat	ccaacctggc	ccgggccttg	1500
tggctactca	atgggagcat	gggcctgagc	gatgggcagg	gtggctaccg	tgtgggcgtg	1560
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agctatgtgc	ttctgaggca	gagcaacaat	ggagtaccag	cagggccctg	ctccttcgcc	2160
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gagagctctg	tctga					2235

<210> 43  
 <211> 744  
 <212> PRT  
 <213> homo sapiens

<400> 43

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 20          25          30
Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala
 35          40          45
Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys
 50          55          60
Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly
 65          70          75          80
Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg
 85          90          95
Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His
 100         105         110
Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val Arg Glu Ser
 115         120         125
Lys Ala Ser Ala Val Gly Asp Asp Lys Val Tyr Tyr Phe Phe Thr
 130         135         140
Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln Ser Arg Ser
 145         150         155         160
Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly Asp Leu Gly
 165         170         175
Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu Lys Ala Arg
 180         185         190
Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly Val Cys Ser
 195         200         205
Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala Ala Phe Thr
 210         215         220
Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile Cys Arg Tyr
 225         230         235         240
Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr Met Glu Tyr
 245         250         255
Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly Val Pro Glu
 260         265         270
Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser Gln Gly Tyr
 275         280         285
Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe Val Lys Leu
 290         295         300
His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly Arg Pro Leu
 305         310         315         320
Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly Thr Pro Val
 325         330         335
Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu Gly Thr Ala
 340         345         350
Asp Gly Trp Ile His Lys Ala Val Val Leu Gly Ser Gly Met His Ile
 355         360         365
Ile Glu Glu Thr Gln Val Phe Arg Glu Ser Gln Ser Val Glu Asn Leu
 370         375         380
Val Ile Ser Leu Leu Gln His Ser Leu Tyr Val Gly Ala Pro Ser Gly
 385         390         395         400
Val Ile Gln Leu Pro Leu Ser Ser Cys Ser Arg Tyr Arg Ser Cys Tyr
 405         410         415
Asp Cys Ile Leu Ala Arg Asp Pro Tyr Cys Gly Trp Asp Pro Gly Thr
 420         425         430
His Ala Cys Ala Ala Ala Thr Thr Ile Ala Asn Arg Ser Gln Gly Ser

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435	440	445
Arg Thr Ala Leu Ile Gln Asp Ile Glu Arg Gly Asn Arg Gly Cys Glu		
450	455	460
Ser Ser Arg Asp Thr Gly Pro Pro Pro Pro Leu Lys Thr Arg Ser Val		
465	470	475
Leu Arg Gly Asp Asp Val Leu Leu Pro Cys Asp Gln Pro Ser Asn Leu		
485	490	495
Ala Arg Ala Leu Trp Leu Leu Asn Gly Ser Met Gly Leu Ser Asp Gly		
500	505	510
Gln Gly Gly Tyr Arg Val Gly Val Asp Gly Leu Leu Val Thr Asp Ala		
515	520	525
Gln Pro Glu His Ser Gly Asn Tyr Gly Cys Tyr Ala Glu Glu Asn Gly		
530	535	540
Leu Arg Thr Leu Leu Ala Ser Tyr Ser Leu Thr Val Arg Pro Ala Thr		
545	550	555
Pro Ala Pro Ala Pro Lys Ala Pro Ala Thr Pro Gly Ala Gln Leu Ala		
565	570	575
Pro Asp Val Arg Leu Leu Tyr Val Leu Ala Ile Ala Ala Leu Gly Gly		
580	585	590
Leu Cys Leu Ile Leu Ala Ser Ser Leu Leu Tyr Val Ala Cys Leu Arg		
595	600	605
Glu Gly Arg Arg Gly Arg Arg Arg Lys Tyr Ser Leu Gly Arg Ala Ser		
610	615	620
Arg Ala Gly Gly Ser Ala Val Gln Leu Gln Thr Val Ser Gly Gln Cys		
625	630	635
Pro Gly Glu Glu Asp Glu Gly Asp Asp Glu Gly Ala Gly Gly Leu Glu		
645	650	655
Gly Ser Cys Leu Gln Ile Ile Pro Gly Glu Gly Ala Pro Ala Pro Pro		
660	665	670
Pro Pro Pro Pro Pro Pro Pro Pro Ala Glu Leu Thr Asn Gly Leu Val		
675	680	685
Ala Leu Pro Ser Arg Leu Arg Arg Met Asn Gly Asn Ser Tyr Val Leu		
690	695	700
Leu Arg Gln Ser Asn Asn Gly Val Pro Ala Gly Pro Cys Ser Phe Ala		
705	710	715
Glu Glu Leu Ser Arg Ile Leu Glu Lys Arg Lys His Thr Gln Leu Val		
725	730	735
Glu Gln Leu Asp Glu Ser Ser Val		
740		

<210> 44  
 <211> 2220  
 <212> DNA  
 <213> homo sapiens

<400> 44	
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cccctctgtg cagccattga tgctgagcc ttcaccttgc caaccagctt cgaggagggg	180
aaggagaagt gtccttatga cccagcccg ggcttcacag gcctcatcat tgatggaggc	240
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tacttttca cggagcgtgc cactgaggag ggctctggca gcttcaatga gagccgcagc	480
agtcaccgtg tggcccggtg ggctcgygtc tgcaaggagg acctgggagg gaagaagatc	540
ctgcagaaga agtggacttc cttcctgaaa gcccgctc tctgccacat tccactgtat	600

Ala Val Gln Leu Gln Thr Val Ser Gly Gln Cys Pro Gly Glu Glu Asp  
625 630 635 640  
Glu Gly Asp Asp Glu Gly Ala Gly Gly Leu Glu Gly Ser Cys Leu Gln  
645 650 655  
Ile Ile Pro Gly Glu Gly Ala Pro Ala Pro Pro Pro Pro Pro Pro  
660 665 670  
Pro Pro Pro Ala Glu Leu Thr Asn Gly Leu Val Ala Leu Pro Ser Arg  
675 680 685  
Leu Arg Arg Met Asn Gly Asn Ser Tyr Val Leu Leu Arg Gln Ser Asn  
690 695 700  
Asn Gly Val Pro Ala Gly Pro Cys Ser Phe Ala Glu Glu Leu Ser Arg  
705 710 715 720  
Ile Leu Glu Lys Arg Lys His Thr Gln Leu Val Glu Gln Leu Asp Glu  
725 730 735  
Ser Ser Val

<210> 46  
<211> 2316  
<212> DNA  
<213> homo sapiens

<400> 46  
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cccctctgtg cagccattga tgctgaggcc ttacacctgc caaccagctt cgaggagggg 180  
aaggagaagt gtccttatga cccagcccgt ggcttcacag gcctcatcat tgatggaggc 240  
ctctacacag ccaactaggta tgaattccgg agcattcctg acatccgccg gagccgccac 300  
ccacactccc tgagaactga ggagacacca atgcattggc tcaatgatgc ggagtttgtg 360  
ttctccgtcc tcgtgcggga gagcaaggcc agtgcagtgg gtgatgatga caaggtgtac 420  
tacttcttca cggagcgtgc cactgaggag ggctctggca gcttcaactca gagccgcagc 480  
agtcaccgtg tggcccgtgt ggctcgygtc tgcaaggag acctgggagg gaagaagatc 540  
ctgcagaaga agtggacttc ctctctgaaa gccctgtcct tctgccacat tccactgtat 600  
gagacactgc gtggggtctg cagcctggat gctgaaacct caagccgtac acacttctat 660  
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<210> 47  
 <211> 771  
 <212> PRT  
 <213> homo sapiens

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Ala Cys Gly Thr His Ala Phe Gln Pro Leu Cys Ala Ala Ile Asp Ala
35      40      45
Glu Ala Phe Thr Leu Pro Thr Ser Phe Glu Glu Gly Lys Glu Lys Cys
50      55      60
Pro Tyr Asp Pro Ala Arg Gly Phe Thr Gly Leu Ile Ile Asp Gly Gly
65      70      75      80
Leu Tyr Thr Ala Thr Arg Tyr Glu Phe Arg Ser Ile Pro Asp Ile Arg
85      90      95
Arg Ser Arg His Pro His Ser Leu Arg Thr Glu Glu Thr Pro Met His
100     105     110
Trp Leu Asn Asp Ala Glu Phe Val Phe Ser Val Leu Val Arg Glu Ser
115     120     125
Lys Ala Ser Ala Val Gly Asp Asp Asp Lys Val Tyr Tyr Phe Phe Thr
130     135     140
Glu Arg Ala Thr Glu Glu Gly Ser Gly Ser Phe Thr Gln Ser Arg Ser
145     150     155     160
Ser His Arg Val Ala Arg Val Ala Arg Val Cys Lys Gly Asp Leu Gly
165     170     175
Gly Lys Lys Ile Leu Gln Lys Lys Trp Thr Ser Phe Leu Lys Ala Arg
180     185     190
Leu Ile Cys His Ile Pro Leu Tyr Glu Thr Leu Arg Gly Val Cys Ser
195     200     205
Leu Asp Ala Glu Thr Ser Ser Arg Thr His Phe Tyr Ala Ala Phe Thr
210     215     220
Leu Ser Thr Gln Trp Lys Thr Leu Glu Ala Ser Ala Ile Cys Arg Tyr
225     230     235     240
Asp Leu Ala Glu Ile Gln Ala Val Phe Ala Gly Pro Tyr Met Glu Tyr
245     250     255
Gln Asp Gly Ser Arg Arg Trp Gly Arg Tyr Glu Gly Gly Val Pro Glu
260     265     270
Pro Arg Pro Gly Ser Cys Ile Thr Asp Ser Leu Arg Ser Gln Gly Tyr
275     280     285
Asn Ser Ser Gln Asp Leu Pro Ser Leu Val Leu Asp Phe Val Lys Leu
290     295     300
His Pro Leu Met Ala Arg Pro Val Val Pro Thr Arg Gly Arg Pro Leu
305     310     315     320
Leu Leu Lys Arg Asn Ile Arg Tyr Thr His Leu Thr Gly Thr Pro Val
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Thr Thr Pro Ala Gly Pro Thr Tyr Asp Leu Leu Phe Leu Gly Thr Ala

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 <211> 2301  
 <212> DNA  
 <213> homo sapiens

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<210> 49  
 <211> 766  
 <212> PRT  
 <213> homo sapiens

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Pro	Tyr	Asp	Pro	Ala	Arg	Gly	Phe	Thr	Gly	Leu	Ile	Ile	Asp	Gly	Gly		
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Leu	Tyr	Thr	Ala	Thr	Arg	Tyr	Glu	Phe	Arg	Ser	Ile	Pro	Asp	Ile	Arg		
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Arg	Ser	Arg	His	Pro	His	Ser	Leu	Arg	Thr	Glu	Glu	Thr	Pro	Met	His		
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Trp	Leu	Asn	Asp	Ala	Glu	Phe	Val	Phe	Ser	Val	Leu	Val	Arg	Glu	Ser		
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Lys	Ala	Ser	Ala	Val	Gly	Asp	Asp	Asp	Lys	Val	Tyr	Tyr	Phe	Phe	Thr		
		130				135					140						
Glu	Arg	Ala	Thr	Glu	Glu	Gly	Ser	Gly	Ser	Phe	Thr	Gln	Ser	Arg	Ser		
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Ser	His	Arg	Val	Ala	Arg	Val	Ala	Arg	Val	Cys	Lys	Gly	Asp	Leu	Gly		
			165					170						175			
Gly	Lys	Lys	Ile	Leu	Gln	Lys	Lys	Trp	Thr	Ser	Phe	Leu	Lys	Ala	Arg		
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Leu	Ile	Cys	His	Ile	Pro	Leu	Tyr	Glu	Thr	Leu	Arg	Gly	Val	Cys	Ser		
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Leu	Ser	Thr	Gln	Trp	Lys	Thr	Leu	Glu	Ala	Ser	Ala	Ile	Cys	Arg	Tyr		
		225			230					235					240		
Asp	Leu	Ala	Glu	Ile	Gln	Ala	Val	Phe	Ala	Gly	Pro	Tyr	Met	Glu	Tyr		
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Gln	Asp	Gly	Ser	Arg	Arg	Trp	Gly	Arg	Tyr	Glu	Gly	Gly	Val	Pro	Glu		
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Pro	Arg	Pro	Gly	Ser	Cys	Ile	Thr	Asp	Ser	Leu	Arg	Ser	Gln	Gly	Tyr		
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Asn	Ser	Ser	Gln	Asp	Leu	Pro	Ser	Leu	Val	Leu	Asp	Phe	Val	Lys	Leu		
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His	Pro	Leu	Met	Ala	Arg	Pro	Val	Val	Pro	Thr	Arg	Gly	Arg	Pro	Leu		
		305			310					315					320		
Leu	Leu	Lys	Arg	Asn	Ile	Arg	Tyr	Thr	His	Leu	Thr	Gly	Thr	Pro	Val		
			325					330						335			
Thr	Thr	Pro	Ala	Gly	Pro	Thr	Tyr	Asp	Leu	Leu	Phe	Leu	Gly	Thr	Ala		
		340						345					350				
Asp	Gly	Trp	Ile	His	Lys	Ala	Val	Val	Leu	Gly	Ser	Gly	Met	His	Ile		
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Ile	Glu	Glu	Thr	Gln	Val	Phe	Arg	Glu	Ser	Gln	Ser	Val	Glu	Asn	Leu		
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Val	Ile	Ser	Leu	Leu	Gln	His	Ser	Leu	Tyr	Val	Gly	Ala	Pro	Ser	Gly		
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Val	Ile	Gln	Leu	Pro	Leu	Ser	Ser	Cys	Ser	Arg	Tyr	Arg	Ser	Cys	Tyr		
			405					410						415			
Asp	Cys	Ile	Leu	Ala	Arg	Asp	Pro	Tyr	Cys	Gly	Trp	Asp	Pro	Gly	Thr		
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His	Ala	Cys	Ala	Ala	Ala	Thr	Thr	Ile	Ala	Asn	Arg	Thr	Ala	Leu	Ile		
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Gln	Asp	Ile	Glu	Arg	Gly	Asn	Arg	Gly	Cys	Glu	Ser	Ser	Arg	Asp	Thr		
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Gly	Pro	Pro	Pro	Pro	Leu	Lys	Thr	Arg	Ser	Val	Leu	Arg	Gly	Asp	Asp		
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 485 490 495  
 Leu Leu Asn Gly Ser Met Gly Leu Ser Asp Gly Gln Gly Gly Tyr Arg  
 500 505 510  
 Val Gly Val Asp Gly Leu Leu Val Thr Asp Ala Gln Pro Glu His Ser  
 515 520 525  
 Gly Asn Tyr Gly Cys Tyr Ala Glu Glu Asn Gly Leu Arg Thr Leu Leu  
 530 535 540  
 Ala Ser Tyr Ser Leu Thr Val Arg Pro Ala Thr Pro Ala Pro Ala Pro  
 545 550 555 560  
 Lys Ala Pro Ala Thr Pro Gly Ala Gln Leu Ala Pro Asp Val Arg Leu  
 565 570 575  
 Leu Tyr Val Leu Ala Ile Ala Ala Leu Gly Gly Leu Cys Leu Ile Leu  
 580 585 590  
 Ala Ser Ser Leu Leu Tyr Val Ala Cys Leu Arg Glu Gly Arg Arg Gly  
 595 600 605  
 Arg Arg Arg Lys Tyr Ser Leu Gly Arg Ala Ser Arg Ala Gly Gly Ser  
 610 615 620  
 Ala Val Gln Leu Gln Thr Val Ser Gly Arg Ala Leu Gln Val His Met  
 625 630 635 640  
 Gly Ser Met Ser Pro Pro Ser Ala Trp Pro Cys Val Leu Asp Gly Pro  
 645 650 655  
 Glu Thr Arg Gln Val Leu Cys Gln Pro Pro Lys Pro Cys Val His Ser  
 660 665 670  
 His Ala His Met Glu Glu Cys Leu Ser Ala Gly Leu Gln Cys Pro His  
 675 680 685  
 Pro His Leu Leu Leu Val His Ser Cys Phe Ile Pro Ala Ser Gly Leu  
 690 695 700  
 Gly Val Pro Ser Gln Leu Pro His Pro Ile Trp Ser Ser Ser Pro Ala  
 705 710 715 720  
 Pro Cys Gly Asp Leu Phe Val Lys Ser Leu Gly Thr Gly Gln Pro Gly  
 725 730 735  
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 Val Asn Gln Pro Pro His Ser Pro Trp Ser Phe Ser Arg Val  
 755 760 765

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 <212> DNA  
 <213> homo sapiens

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